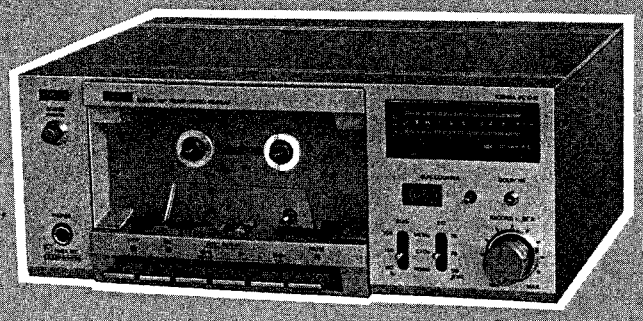
SERVICE DATA
FILE NO. 100-123

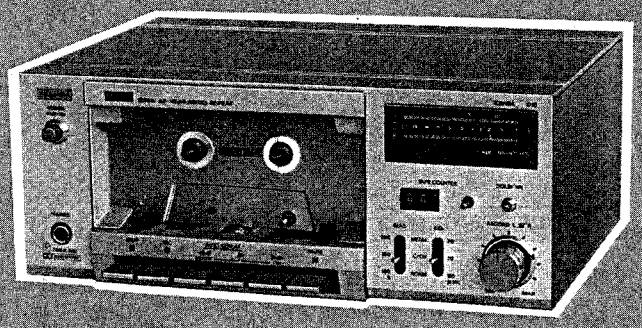
TOSHIBA

STEREO CASSETTE DECK

PC-D10



For TE, TU, AY



For TA, TC, VF

SPECIFICATIONS

Power Source:
AC 220V 50Hz for Europe
AC 240V 50Hz for United Kingdom & Australia
AC 115V/230V 50Hz/60Hz for Southeast Asia, South America and Middle East.
AC 120V 60Hz for U.S.A. and Canada
Power Consumption:
20W
Track Type:
4-track, 2-channel stereo
Recording System:
AC bias
Erase System:
AC erasure
Head:
Super AP Head x 1
4-gap AF Head x1
Motor:
DC servo motor
Tape Speed:
4.8 cm/sec
Fast Forward/Rewind Time:
Approx. 80 seconds (C-60 tape)
Semiconductors:
10 ICs, 21 transistors, 27 diodes
Wow and Flutter:
0.05% (WRMS)
0.16% (DIN, Peak-to-Peak)
Signal/Noise Ratio:
62 dB (Metal tape)
58 dB (Chrome tape)
Dolby in, weighted, line, peak
Dolby effect: 5 dB improvement at 1 kHz,
10 dB improvement at 5 kHz
Frequency Response:
at 0 dB input
Metal tape 35 Hz to 12.5 kHz
Chrome tape 35Hz to 8 kHz
at −20 dB input
Metal tape 35 Hz to 18 kHz
Chrome tape 35 Hz to 18 kHz
Normal tape 35 Hz to 17 kHz
Input Jack:
Mic 0.25 mV (600 Ohms to 10 k Ohms)
Line 70 mV (Over 50 k Ohms)
Output Jack:
Line 0.4V (50 k Ohms)
Headphones 1 mW (8 Ohms)
Dimensions:
257(W) x 106(H) x 214(D) mm
(including feet and protruding knobs)
Weight:
3.3kg
Accessories:
Connection cords (PIN-PIN) x 2
Head cleaning stick x 1
Dust cover x 1

Specifications are subject to change without notice.

TA, TC, TE, TU, AY, VF

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DOLBY SYSTEM

*Noise Reduction System is manufactured under license from Dolby Laboratories.
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1. FEATURES

- **Metal tape compatibility**
  TOSHIBA has adopted such measures as a Super AP (Super hard Permalloy) record/playback head with a high magnetic flux density and high linearity and an efficient 4-gap AF (Ferrite) erase head, enabling the unit to take full advantage of the new high performance metal tapes. Both of these heads can boast of superb anti-abrasion characteristics.
- **Auto-repeat playback**
  By pressing down the play and rewind keys simultaneously, the unit will rewind and repeat tape playback continuously.
- **Bar-graph LED peak level display**
  These are two rows of 10 LEDs (Light Emitting Diodes) which are digitally-governed. Unlike the mechanical needle-type meters, these are driven electronically, thus giving a faster response to input signals and better accuracy. To provide a strong visual warning when the inputs approach the distortion level, the indication above 0 dB is red.
- **Unattended recording, timer wake-up**
  By connection to an optional audio timer unit, the cassette deck can be used to make unattended recordings of scheduled FM broadcasts, etc. Wake-up operation at a preset time is also possible.
- **Simple, easily visible direct cassette loading**
- **Dolby noise reduction system to suppress tape hiss**

2. OPERATING CONTROLS

(The photographs are ones of PC-D10, European Model)

[POWER] Power Switch
When the power is turned on, the cassette illumination lamp in the cassette housing will come on.

[PHONES] Headphone Jack
Use this jack to connect a pair of stereo headphones with 8 Ohms impedance.

[■ STOP] Stop Key
Press this key to release the tape transport mechanism from any setting except pause.

[● REC] Record Key
To begin recording, press this key simultaneously with the [▶] Play key. The Record key may also be pressed by itself in order to make adjustement in the recording level prior to recording.

[◀◀] Rewind/Review Key
This key rewinds the tape back to its starting point. If this control is pressed while play is in progress, the tape will rewind only as long as the control is held down by finger pressure. Play will resume when the key is released. If the Review function in utilized, wait for one or two seconds for the deck to remove any slack before pressing the review key once again.
AUTO REPEAT can be performed by pressing this key simultaneously with the [▶] play key. See the section on AUTO REPEAT for a detailed explanation.

[▶] Play Key

FRONT VIEW

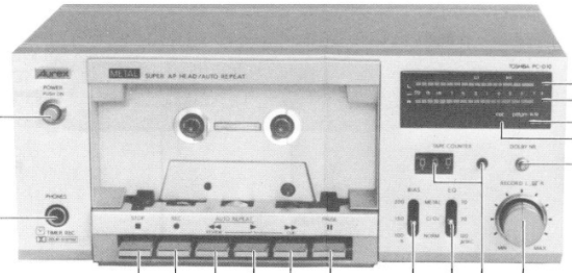

Figure 1.

[▮▮ PAUSE] Pause Key
Press down this key when you wish to stop tape motion temporarily during recording or play back. When it is released, tape motion will continue.

[▶▶] Fast Forward/Cue Key
This transports the tape forward at a high rate of speed. If this key is pressed while play is in progress, the tape will be fast forwarded only as long as it is held down by finger pressure. Play will resume when the key is released. If the cue function is utilized repeatedly, wait for one or two seconds for the deck to remove any slack from the tape before pressing down the key once again.

Peak Level Display Meters
Arranged in 2 rows of 10 LEDs (Light Emitting Diodes) this displays the peak value of the input (recording) and playback signals.

[DOLBY NR] Dolby Indicator
This lights to show that the deck's Dolby noise reduction circuit has been activated.

[RECORD] Record Indicator
This lights to show that the deck is set to the record mode.

[DOLBY NR] Dolby NR Button
Set this to "ON" when making a Dolby-recorded tape or playing back a tape which was recorded in the Dolby mode.

Record Level Control Knob
Adjust this knob to the proper recording levels for input from line sources of microphones. The input levels for left and right channels may be set separately, with the outside part of the knob for the left channel and the inside part for the right.

Tape Counter
Counter Reset Button

[BIAS] [EQ] Bias/EQ Switches
Set these to correspond to the type of cassette tape being used.

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(The photographs are ones of PC-D10, European Model)

[OUTPUT] Output Adjustment Knob
This permits adjustment of the level from the line out terminals. Use it to equalize output volume of the deck with your tuner, turn table and other components. This also affects the headphone jack output.

[MIC] Microphone Jacks
For recording with microphones, attach a pair of microphones (optional) with standard 6.3mm plugs to the left and right MIC jacks. Microphones with an impedance of 600 Ohms to 10 k Ohms are recommended. When microphones are connected to the MIC jacks, the line input is automatically disconnected.

[LINE OUT] Line Out Terminals
Connect the pin cords provided to join the deck to the TAPE IN or AUX terminals on your reciever or amplifier.

[LINE IN] Line In Terminals
Connect the pin cords provided to join the deck to the TAPE OUT on your receiver/amplifier or an input source other than microphones.

Note: When making connections, be sure to match the left and right channels of the deck with their corresponding terminals on the amplifier or on other audio component.

REAR VIEW

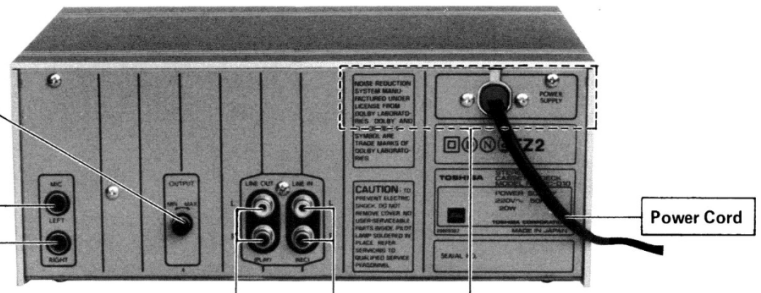

Figure 2.

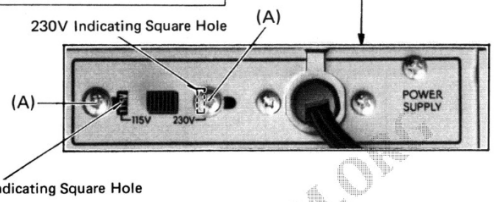

Figure 3.

NOTE: Ordinary unit has been already set to the "230V" position.

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• VOLTAGE CONVERSION FOR PC–D10-VF

(Models for Southeast Asia, South America and Middle East)

In the area adopted to 115V, the voltage selector switch must be changed as follows:

1. Loosen two BID screws (A) (337, 3ϕx10mm) to their halves holding the jack plate and the switch (S7). Their tips have been already locked but by exceeding to loosen them, the switch may get out of place. When they become tighter, don't loosen them moreover.
2. Slide the washers and screws (A) to the right or left side by using your finger tips. (In this case, be careful not to injure the jack plate with the washers.)
3. After confirming that the "115V" or "230V" printed on the jack plate indicates same voltage as on the label of the switch through the holes at the each side, tighten the two screws (A).

3. OPERATING INSTRUCTIONS

• TAPE PLAY

1. Insert a cassette.
2. If playing a Dolby-encoded tape, press in the [DOLBY NR] button.
3. Set the [EQ] switch to correspond to the tape in use.
4. Press the [▶] play key.

EQ Switch Settings:	EQ
Metal Tape	70
Chrome Tape	70
Ferrochrome Tape	70
Normal (LH) Tape	120

During Play, the Bias setting does not have any effect.

Figure 4.

- If the [▮▮ Pause] key is det to the on position, tape [▶ Play] will not begin.
- This deck is equipped with a full automatic stop mechanism. When the tape winds to its end in the RECORD, PLAY, F.F. or REW modes, the unit will sense the tension on the tape and release all controls. (Note: the auto-stop does not function if the deck is set to AUTO REPEAT.)

• AUTO REPEAT Operation

By pressing down the [▶] play and [◀◀] Rewind keys simultaneously, so that they lock in position, the deck can be made to rewind the tape to its start and play back the tape again continuously. This function can be operated two ways:

1. Play → Rewind → Play

Press down the [▶] Play and [◀◀] Rewind keys simultaneously so that they lock in position. At the end of play the tape will rewind to its start and repeat play automatically.

2. Rewind → Play → Rewind

During tape play, press down the [◀◀] Rewind key and hold it down while still pressing the [▶] Play key. The deck will immediately rewind the tape to its start and then automatically commence tape playback.

Note: If the Rewind key is not locked into position in tandem with the Play key, it will function as the Review operation. Therefore, be sure to press the Play and Rewind keys simultaneously if you desire AUTO REPEAT.

• Recording from Radio or Turntable

1. Insert a tape on which the accidental erase prevention tabs are intact.
2. If recording with Dolby noise reduction, set the [DOLBY NR] button on.
3. Set the Bias and EQ switches to correspond with the type of tape in use.
4. Press down the [▮▮ Pause] key. Then set the deck to record by simultaneously pressing down the [● REC] and [▶] Play keys. Monitor the input levels shown on the peak display and adjust the recording level control knob to the proper input volume.
5. Press the [▮▮ Pause] Play key to release it and start recording.

Position of Bias/EQ Switches	BIAS	EQ
Metal Tape	200	70
Chrome Tape	150	70
Ferrochrome Tape	100	70
Normal (LH) Tape	100	120

Figure 5.

Important: Set the recording input levels so that the Peak indicator does not exceed the following maximum levels:

- For Normal or Chrome tape: 0 to +3 dB, most readings should be in the −5 to −10 dB range.
- For Metal tape: +3 to +5 dB, most readings should be in the 0 to −5 dB range.

Setting to the above recommended levels will enable the making of high-quality recordings with minimal distortion.

Note: If a sound source contains large amounts of high frequency components (cymbals etc.), better results can be obtained by setting the input to a very slightly lower level.

- The maximum Dolby level is indicated by the " DD " symbol at the +3 dB level. AD indicates the adres level. If connecting an adres unit such as the AD-15 , set the input level to correspond to the −3 dB point. Refer to adres instruction booklet for futher detailed instructions.

- **Recording With Microphones**

When using microphones to make recordings, after connecting the microphones to the inputs at the rear of the set, perform the same operations as above.

Note: If Microphones are inserted into the [MIC] input jacks, the deck will give the microphones precedance over the line connection.

■ CONNECTION

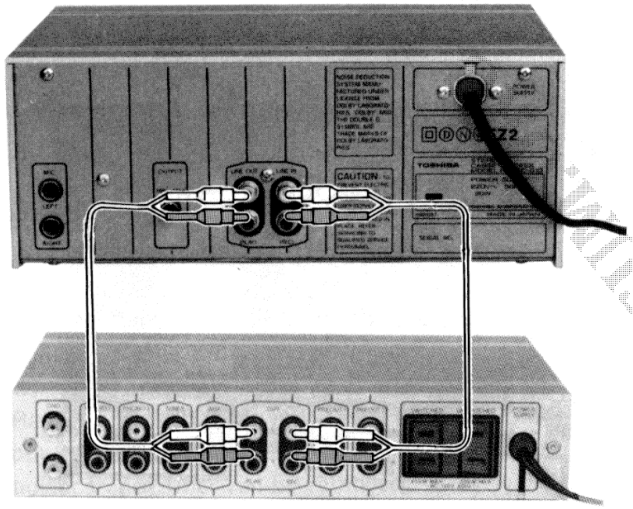

Figure 6

NOTES:

- Use the stereo pin cords provided to connect the unit as shown in the graph.
- For convenience, it is recommended that the red plug alwaya be used to connect to the right channel (R) terminals.
- Connections should be made with the amplifier turned off.
- Connect the plug firmly to ensure against generation of noise from the terminals.

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4. DISASSEMBLY INSTRUCTIONS

(The photographs are ones of PC-D10, European Model)

REMOVAL OF FRONT PANEL

1. Remove two chrome screws ① (3ϕ x 8mm) on the bottom plate side as shown in Figure 7.
2. Remove four BID screws ② (3ϕ x 6mm) in sequence of (1) to (3) as shown in Figure 7. For reassembly, fasten the screws in reverse order; (3) to (1).

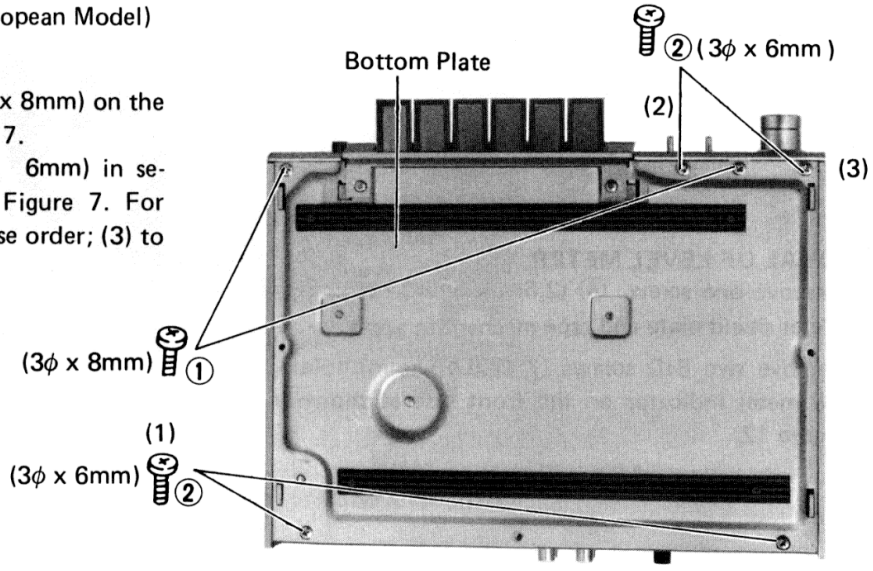

Figure 7

3. Remove two chrome screws ③ (3ϕ x 8mm) on the jack plate side and the front panel can be removed as shown in Figure8. In this case, take care of no missing the counter reset knob which is apt to fall off.

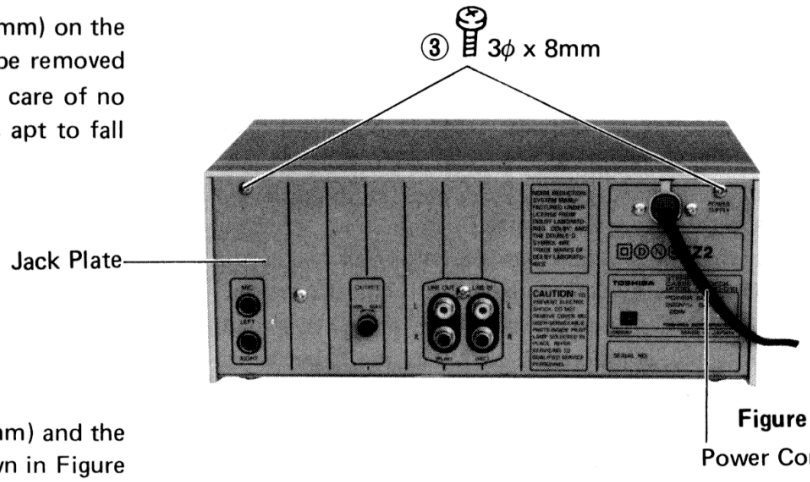

Figure 8

REMOVAL OF SIDE PANEL

1. Remove four BID screws ④ (2.6ϕ x 6mm) and the both side panels can be removed as shown in Figure 9. (For reassembly, confirm each panel to be right or left one.)

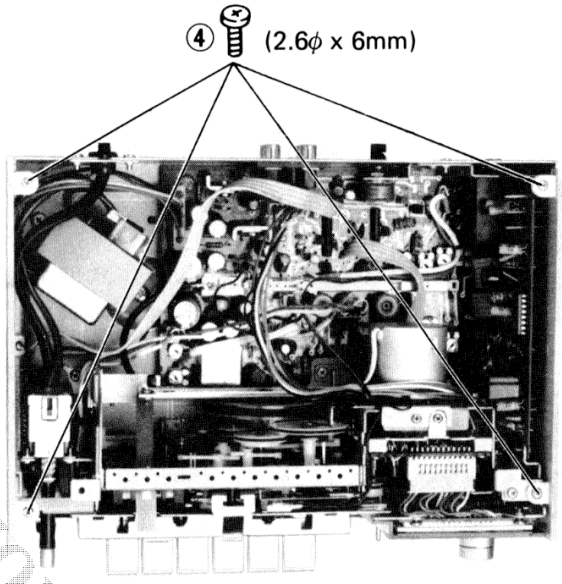

Figure 9

REMOVAL OF HEAD COVER

1. Remove two BID screws ⑤ (2.6ϕ x 5mm) holding the bottom plate and pull out the head cover in the arrow direction as shown in Figure 10.
   (It is capable of replacement of a record/playback head and a erase head to remove the head cover.)

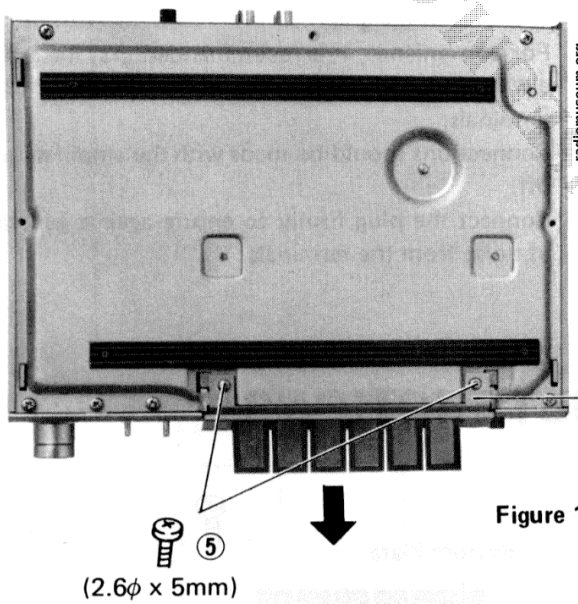

Figure 10

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REMOVAL OF LEVEL METER

1. Remove one screw ⑥ (2.6ϕ x 5mm) holding the meter shield plate and tape mechanism assembly.
2. Remove two BID screws ⑦ (2.6 ϕ x5mm) holding the meter indicator on the front side as shown in Figure 12.

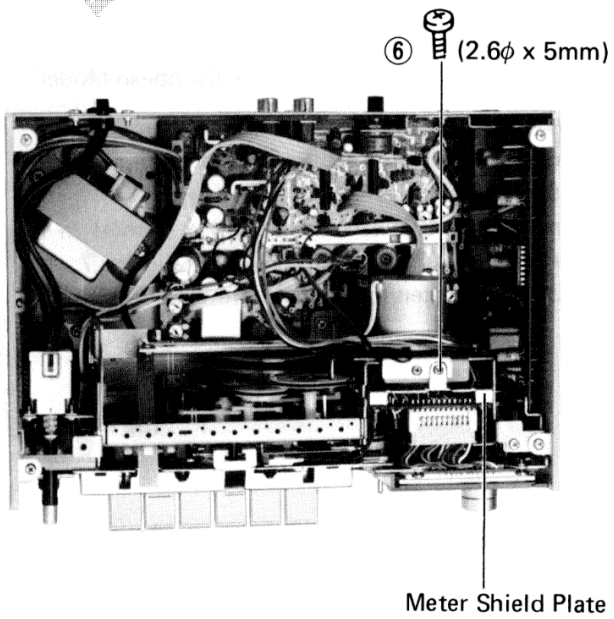

Figure 11

3. Remove one BID screw ⑧ (2.6 ϕ x 5mm) holding the meter shield plate and the amplifier chassis (front side) as shown in Figure 12.
4. Lift up the meter drive P.C. Board and the meter upwards, the level meter P.C.Board can be removed from the unit.
5. After removing the meter P.C. Board, remove three BID screws ⑨ (2.6 ϕ x 5mm) holding the P.C. Board and the shield plate can be removed to check the solder side of the meter drive P.C.Board as shown in Figure 13.

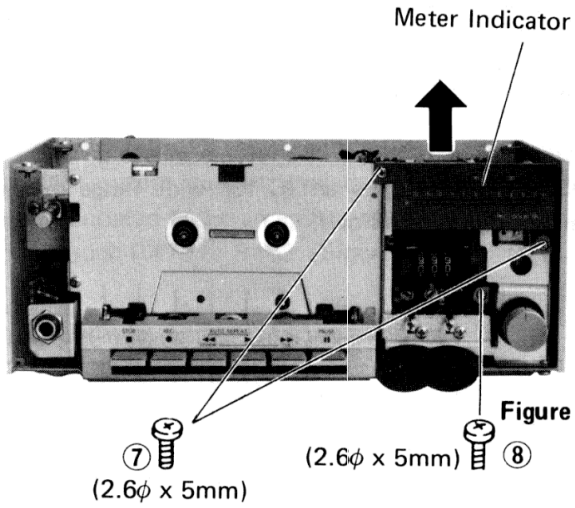

Figure 12

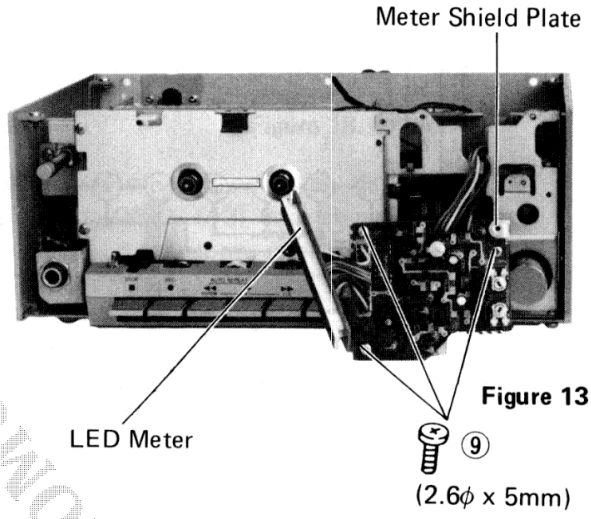

Figure 13

REMOVAL OF MOTOR, POWER TRANSFORMER AND TAPE MECHANISM ASSEMBLY

1. Remove one screw ⑩ (2.6ϕ x 5mm) holding the motor and take off two belts hung on the motor pulley, and the motor can be removed out from the tape mechanism assembly.
2. Remove two BID screws ⑪ (4ϕ x 6mm) holding the power transformer and the shield plate and the power transformer can be removed.
3. Remove two BID screws ⑫ (3ϕ x 4mm) holding the tape mechanism and the bottom plate and slide it backwards and the tape mechanism assembly can be removed from the unit.

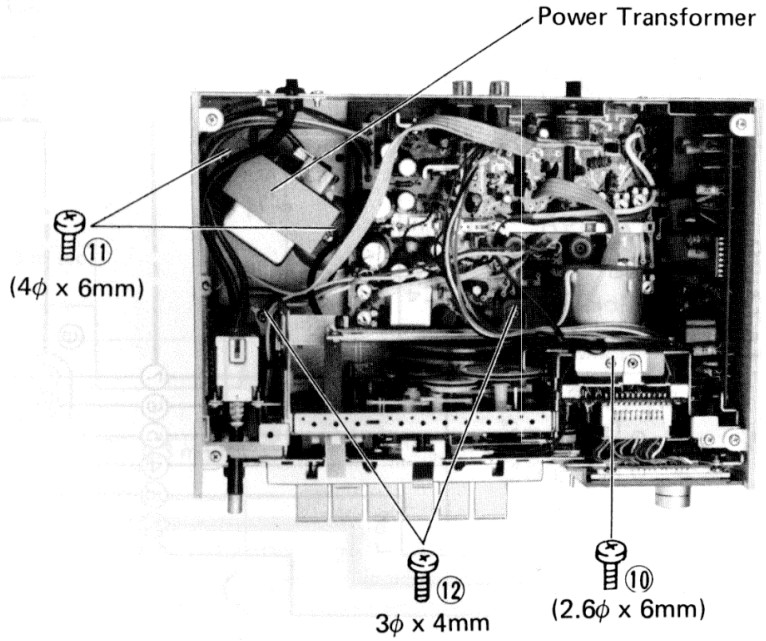

Figure 14

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5. TECHNICAL POINTS

Peak Meter Drive Circuit

The meter drive circuit operates for –B side to be 0V.
The Q505 (TA7318P) is an IC for wide range meter drive and operates as follows.

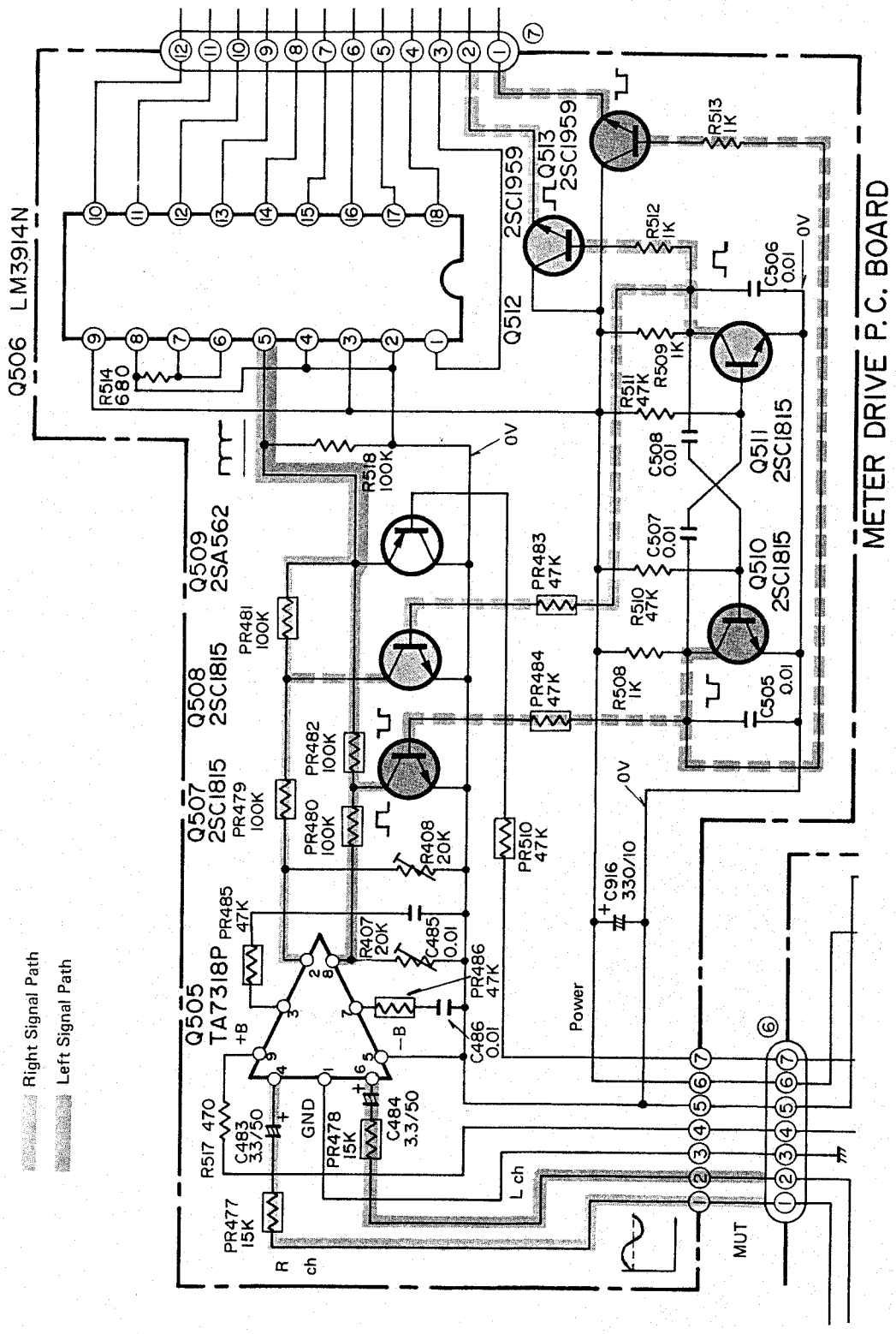


Figure 15.

Input terminals are divided in two channels at pin Nos. 4 (R ch) and 6 (L ch) of Q505.
The signal inputed in these terminals makes a wave form on VTVM as shown in Figure 16 (Input signal: f = 1 kHz, Dolby Point: 580 mV, +3 dB). The signal outputed at the pin Nos. 3 and 7 makes a waveform as shown in Figure 17. This waveform occurs with a charge or discharge of C485 and C486, and is charged in accordance with an input signal level.

The output signal at pin Nos. 2 and 8 terminal makes a rectifired waveform (figure 18) and make the meter to drive.
This waveform is also changed with an input signal level. The present output voltage level that is about 5.5V, is further attenuated to be an appropriate level to a meter driving through R479 to R482. (Figure 18)

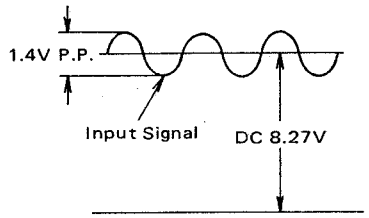


Figure 16. (4P, 6P)

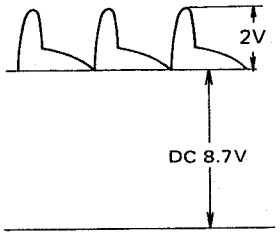


Figure 17. (3P, 7P)

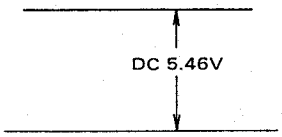


Figure 18. (2P, 8P)

Peak Meter Switching Circuit (Non-stable Multivibrator)

The left or right indication of the meter is made with an alternate switching operation of the power supply portion on the meter (D503 ... S4378).

Low-to-High level of each switching transistor (Q507, 508, Q510, 511, Q512, 513) is as shown in Figure15. (For each signal and waveform, refer to Figure 19 to 22).

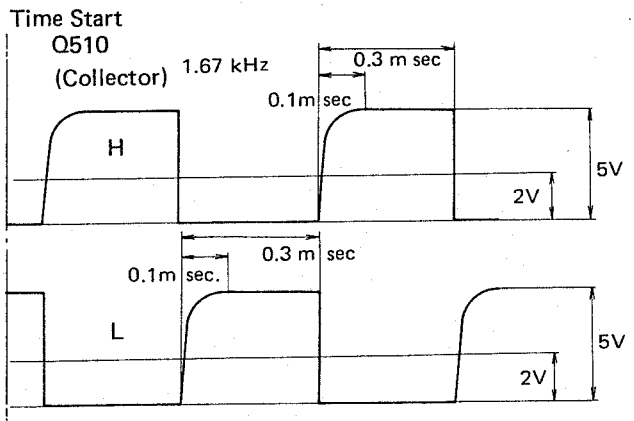


Figure 19.

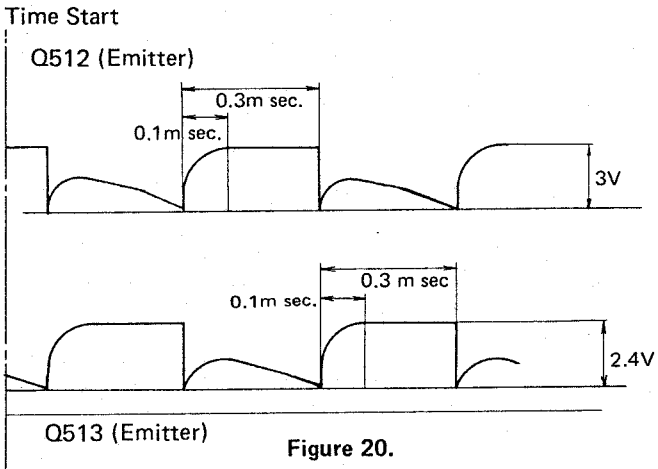


Figure 20.

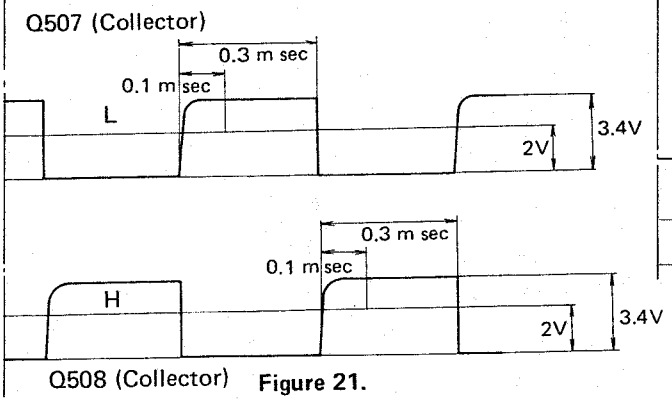


Figure 21.

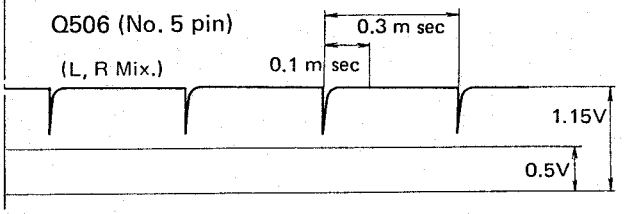
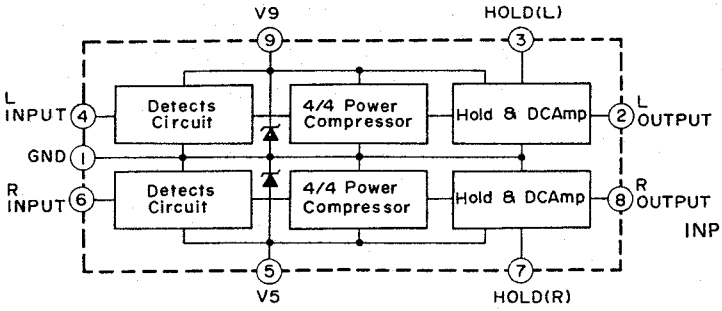
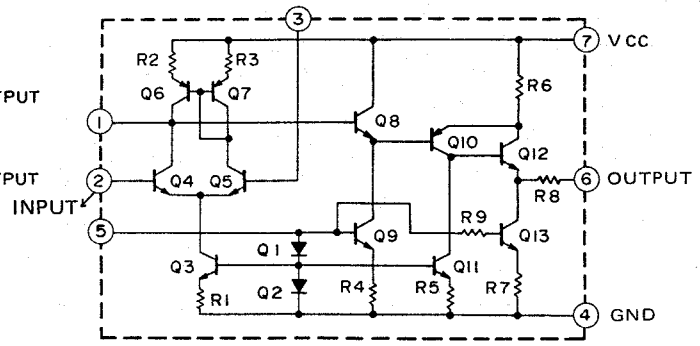


Figure 22.

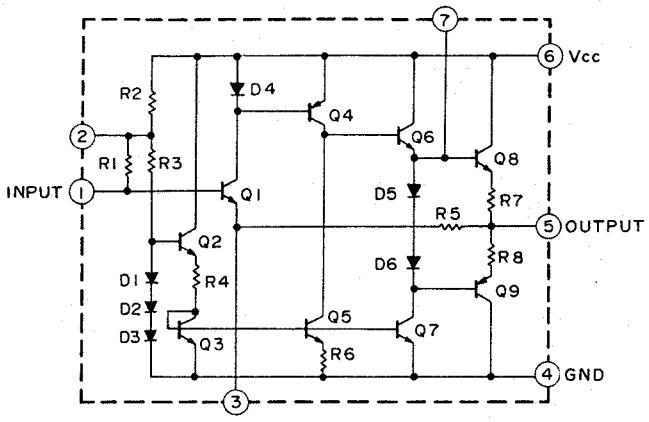
- TA7318P (Wide Range Peak Power Meter Drive)



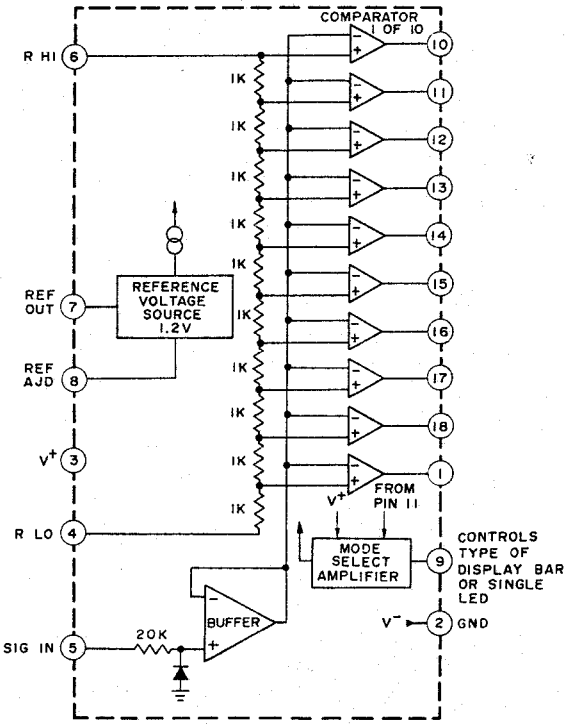
- TA7136P (Two Power Pre-Amplifier)



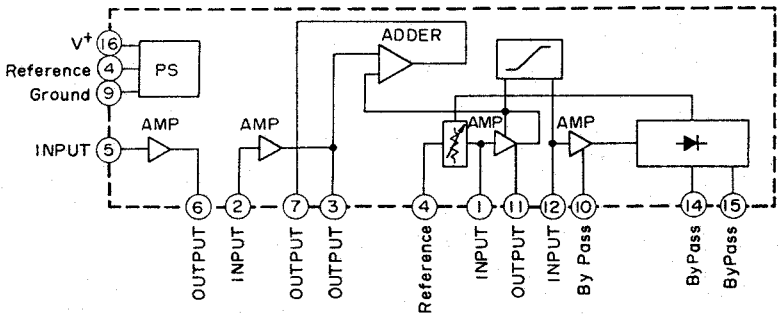
- TA7140P (Low Frequency Amplifier)



- LM3914N (LED Drive for Dot/Bar Indication)



- NE646BN-C (Dolby Noise Reduction)



- TA7322P (Two Power Pre-Amplifier for High Frequency & Low Noise)

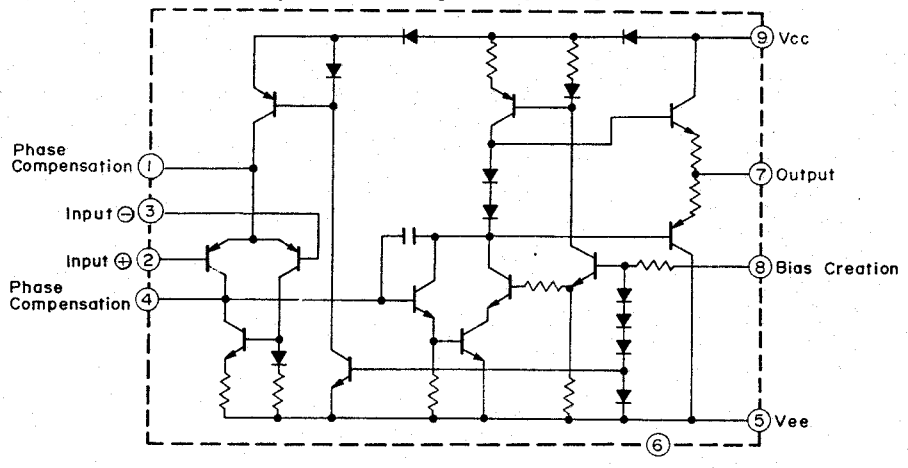


Figure 23.

6. BLOCK DIAGRAM

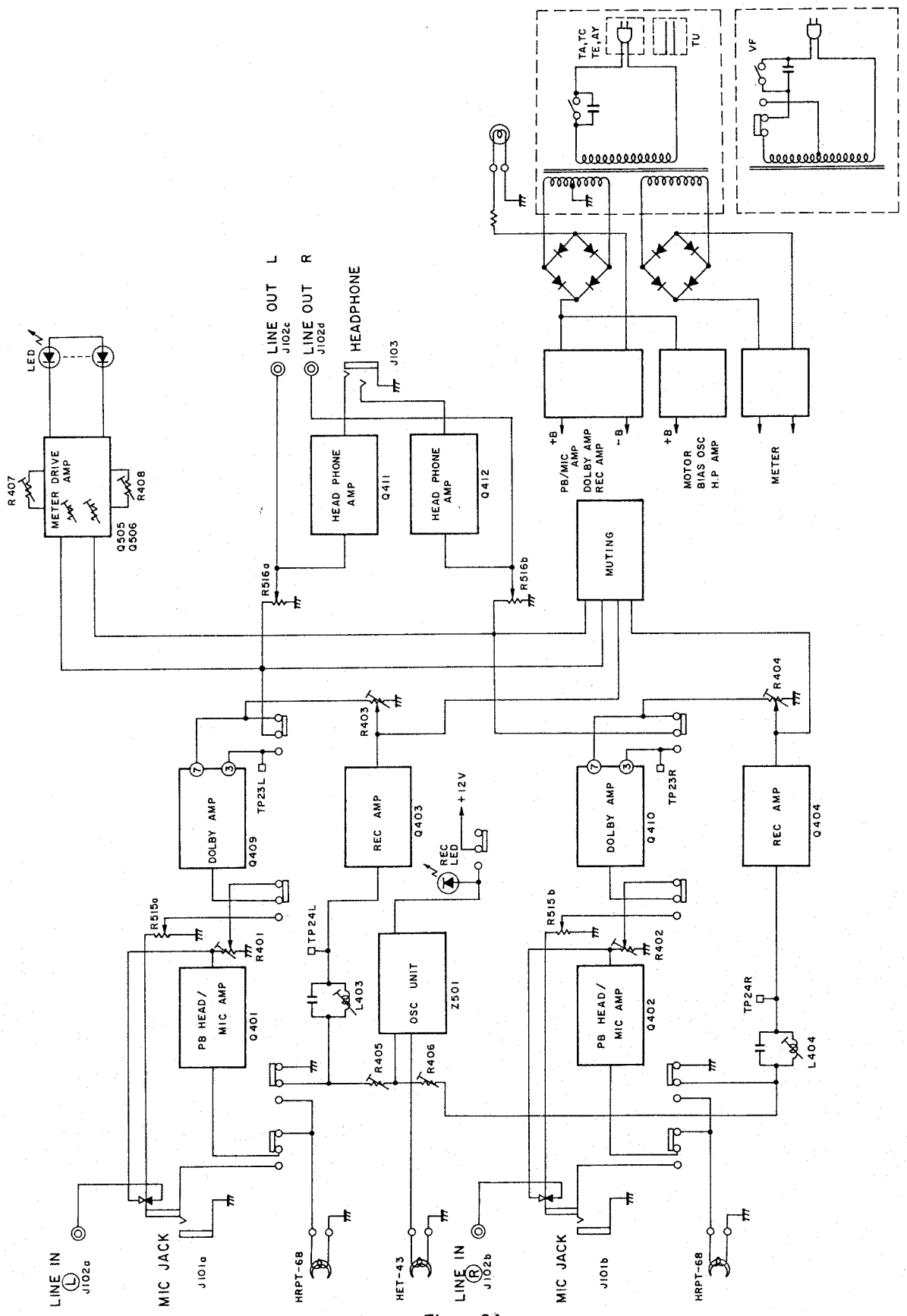


Figure 24.

7. ELECTRICAL ADJUSTMENTS

■ ADJUSTMENT LOCATIONS

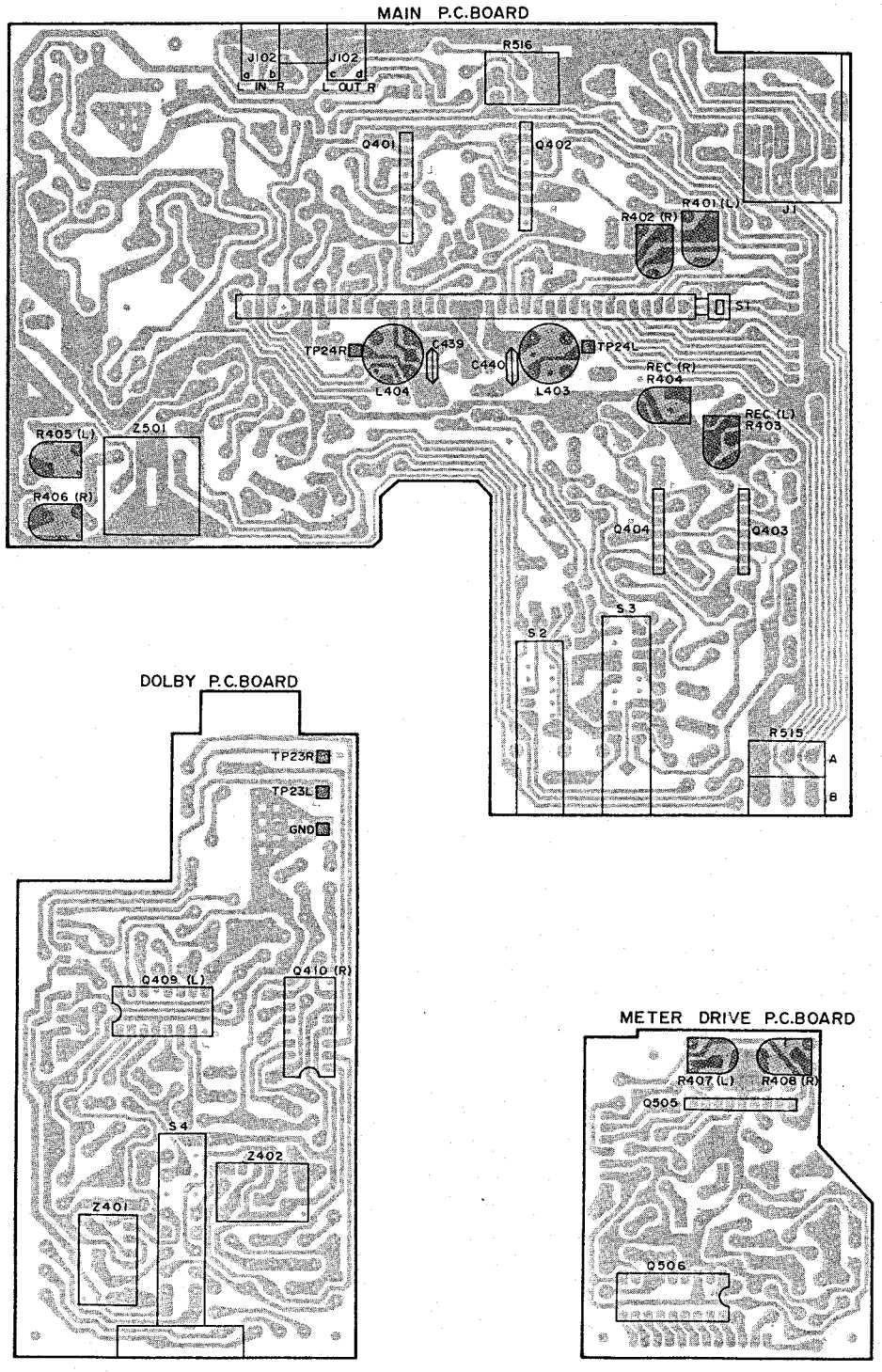


Figure 25.

■ ADJUSTMENT PROCEDURES

Adjustment Items	Spec. Value	Test Tape	Volume		Switch			Adjustment Parts	Test Points	Input (ATT)	Connection	Remarks
			Rec.	Out	BIAS	EQ	NR					
Head Azimuth Confirmation	Max.	MTT-114	–	Max.	NOR	NOR	OUT	Adjusting Screw (See Figure 26)	Line Output	–	–	Max. output level on AC voltmeter. After adjusting, must be applied a locking paint to the adjusting screw.
Playback Sensitivity	580 ±10mV	MTT-150	–	Max.	NOR	NOR	OUT	R401 R402	TP23L TP23R	–	Figure 27	VTVM indicates 580 ±10mV. (TP23L): Cathode side of C469 (10mfd/16V).
Bias Leak	Min.	–	–	Max.	NOR	NOR	OUT	L403 L404	TP24L TP24R	–	Figure 28	VTVM indicates minimum.
Line Input	580 ±10mV	–	Adjust	Max.	CrO_2	CrO_2	OUT	Recording Volume	TP23L TP23R	400 Hz –20 dB ±0.5	Figure 29	VTVM indicates 580 ±10mV.
Level Meter	Meter Ind.: –3 dB	–	Adjust	Max.	CrO_2	CrO_2	OUT	R407 R408	Meter	400 Hz –26 dB ±0.5	–	Four squares (LEDs) of 0 dB to –3 dB do not illuminate.
	Meter Ind.: +3 dB	–	Adjust	Max.	CrO_2	CrO_2	OUT	–	Meter	400 Hz –20 dB	–	One square (Red LED) illuminates.
Rec/Play Frequency Characteristics	0 ±1 dB	AC-511	Adjust	Max.	CrO_2	CrO_2	OUT	R405 R406	Line Output	400 Hz/ 10 kHz –43 dB	Figure 30	Difference between 400 Hz and output is kept within 0 ±1 dB on VTVM.
Rec./Play Sensitivity	580 ±10mV	AC-511	Adjust	Max.	CrO_2	CrO_2	OUT	R403 R404	TP23L TP23R	400 Hz –20 dB	Figure 31	VTVM indicates 580mV ±10mV (Reference value).

● Test conditions: Supply voltage: See specifications on book cover, Input: 0 dB (1 V rms). Line input impedance: 600 ohm
Line output load impedance: 47K ohm, Test point load impedance: non-load.

■ TEST EQUIPMENTS

1. VTVM (Vacuum Tube Voltmeter)
2. Signal Generator
3. Resistance Attenuator
4. Screwdriver
5. Test Tapes
   MTT-114 (10 kHz)
   MTT-150 (400 Hz)
   AC-511 (CHROME TAPE)

■ TEST EQUIPMENT CONNECTIONS

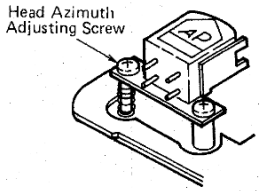


Figure 26.

(Playback Sensitivity Adjustment)

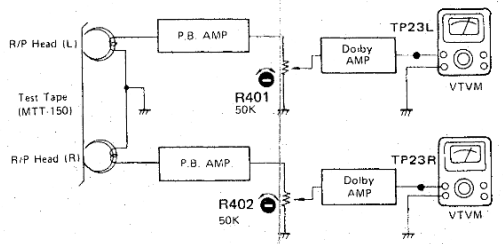


Figure 27.

(Bias Leak Adjustment)

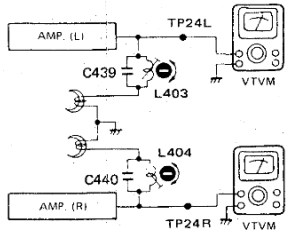


Figure 28.

(Line Input Adjustment)

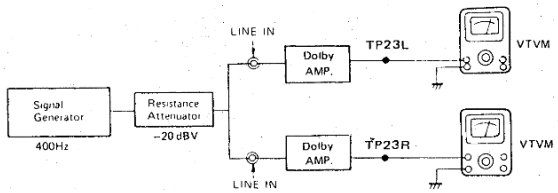


Figure 29.

(Rec/Play Frequency Characteristics Adjustment)

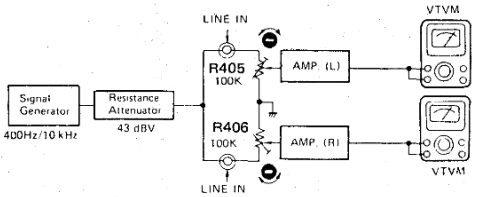


Figure 30.

(Rec/Play Sensitivity Adjustment)

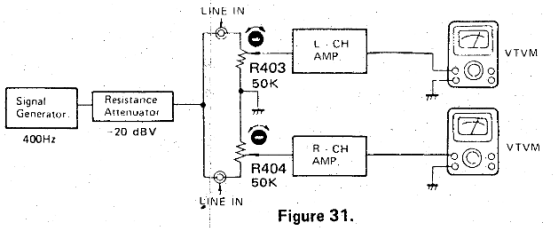
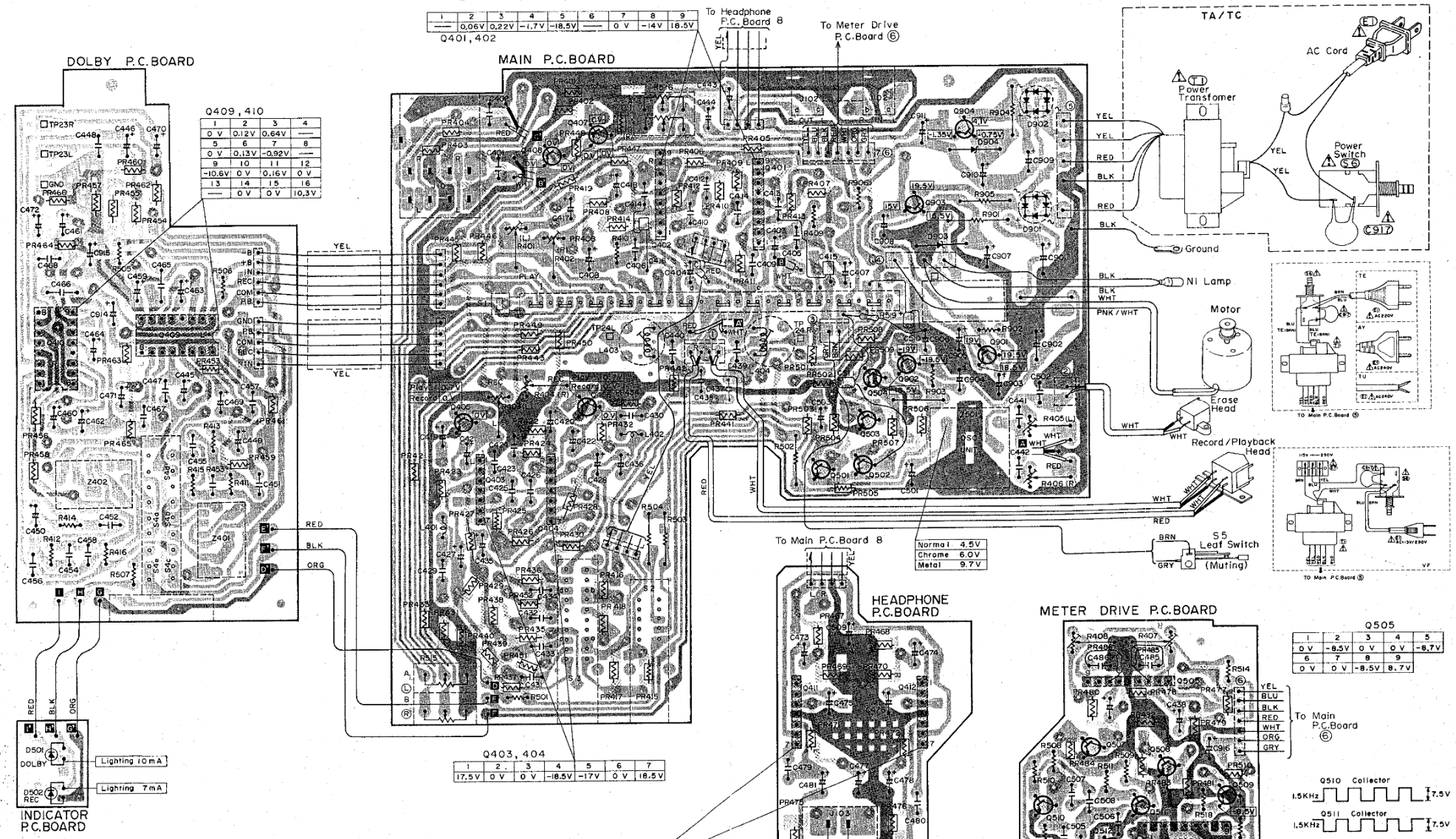


Figure 31.

8. P.C.BOARD PARTS LOCATIONS



1	2	3	4	5	6	7	8	9
——	0.06V	0.22V	-1.7V	-18.5V	——	0 V	-14 V	18.5V

Q401, 402

1	2	3	4
0 V	0.12V	0.64V	——
5	6	7	8
0 V	0.13V	-0.92V	——
9	10	11	12
-10.6V	0 V	0.16V	0 V
13	14	15	16
——	0 V	0 V	10.3V

Q409, 410

1	2	3	4	5	6	7
17.5V	0 V	0 V	-18.5V	-17V	0 V	18.5V

Q403, 404

1	2	3	4	5	6	7
8.2V	8.4V	7.8V	——	7V	15V	0V

Q411, 412

Normal	4.5V
Chrome	6.0V
Metal	9.7V

1	2	3	4	5
0 V	-8.5V	0 V	0 V	-8.7V
6	7	8	9	
0 V	0 V	-8.5V	8.7V	

Q505

1	2	3	4	5	6
0 V	-8.7V	-1.35V	-8.7V	-8.5V	-7.3V
7	8	9	10	11	12
-7.3V	-8.7V	-1.35V	——	——	——
13	14	15	16	17	18
——	——	——	——	——	——

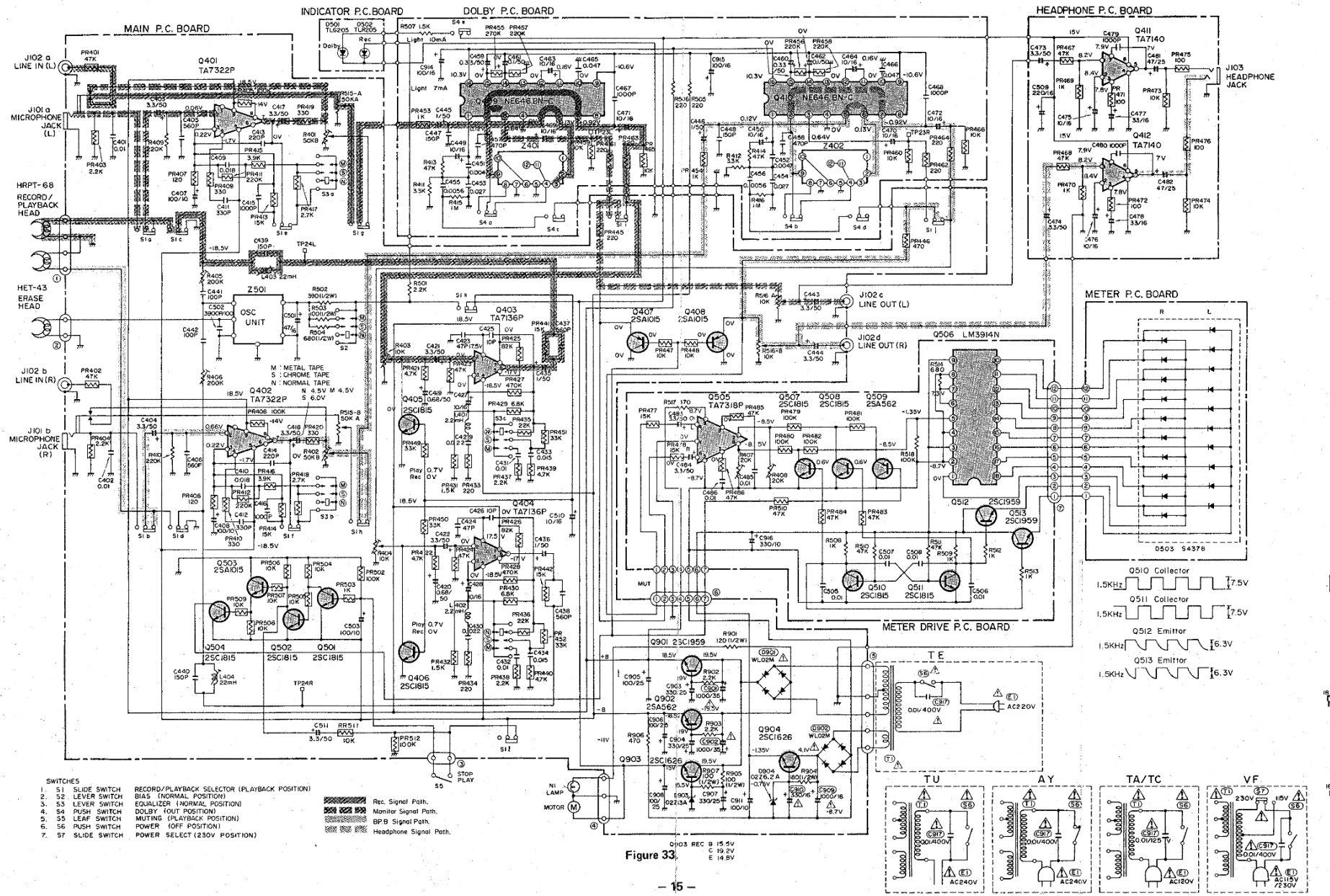
Q506

Figure 32.

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

9. SCHEMATIC DIAGRAM

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.



SWITCHES

1.	S1	SLIDE SWITCH	RECORD/PLAYBACK SELECTOR (PLAYBACK POSITION)
2.	S2	LEVER SWITCH	BIAS (NORMAL POSITION)
3.	S3	LEVER SWITCH	EQUALIZER (NORMAL POSITION)
4.	S4	PUSH SWITCH	DOLBY (OUT POSITION)
5.	S5	LEAF SWITCH	MUTING (PLAYBACK POSITION)
6.	S6	PUSH SWITCH	POWER (OFF POSITION)
7.	S7	SLIDE SWITCH	POWER SELECT (230V POSITION)

Rec. Signal Path.
Monitor Signal Path.
BPB Signal Path.
Headphone Signal Path.

2SC1626

2SC1815
2SC1959
2SA1015
2SA562

TA7322P
TA7318P

TA7136P
TA7140P

LM3914N

NE646BN

Figure 33.

10. CABINET PARTS LOCATIONS

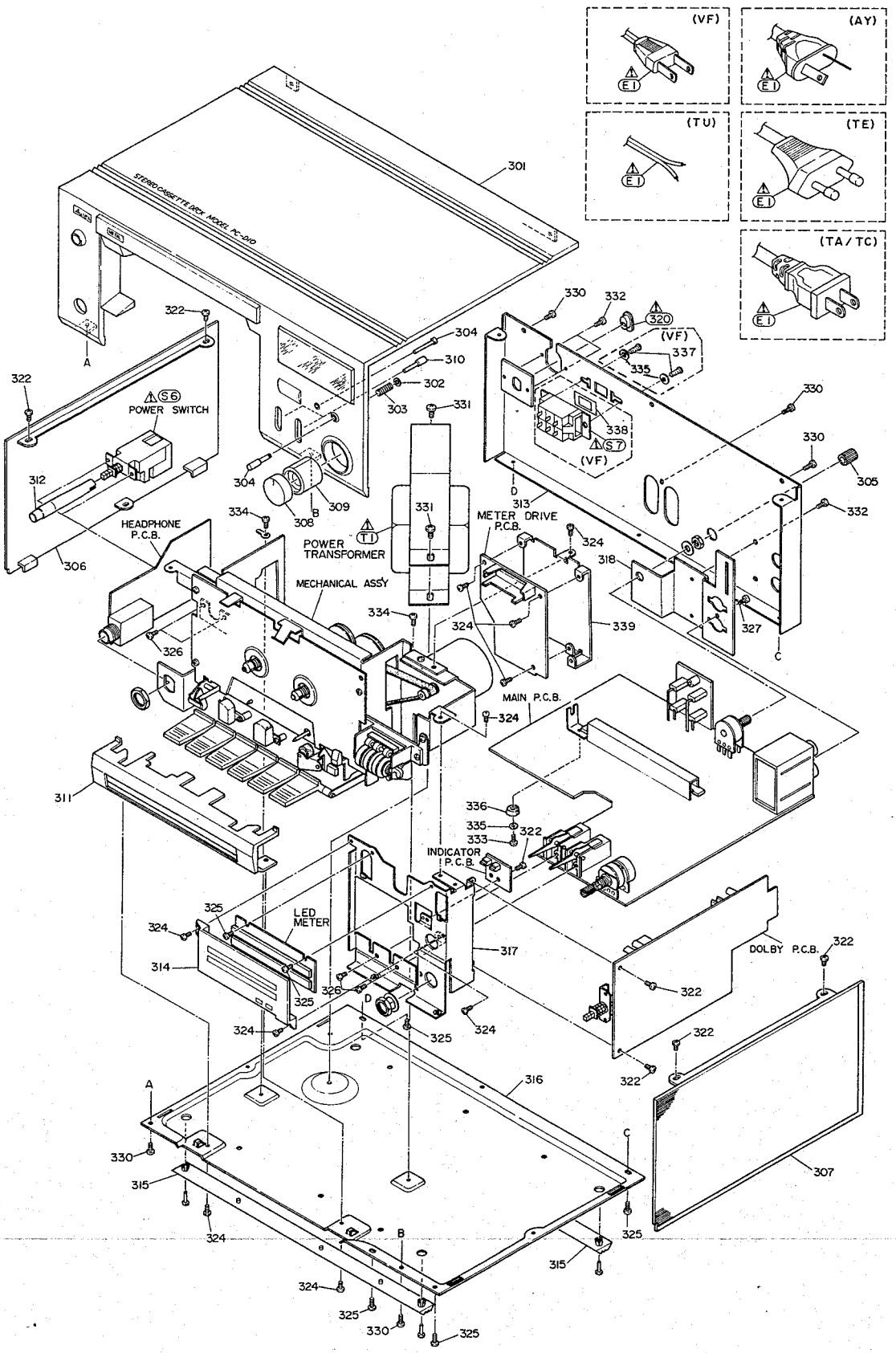


Figure 34.

NOTE: Parts excluded in the Parts List are not available as replacement parts.

11. MECHANICAL PARTS LOCATIONS

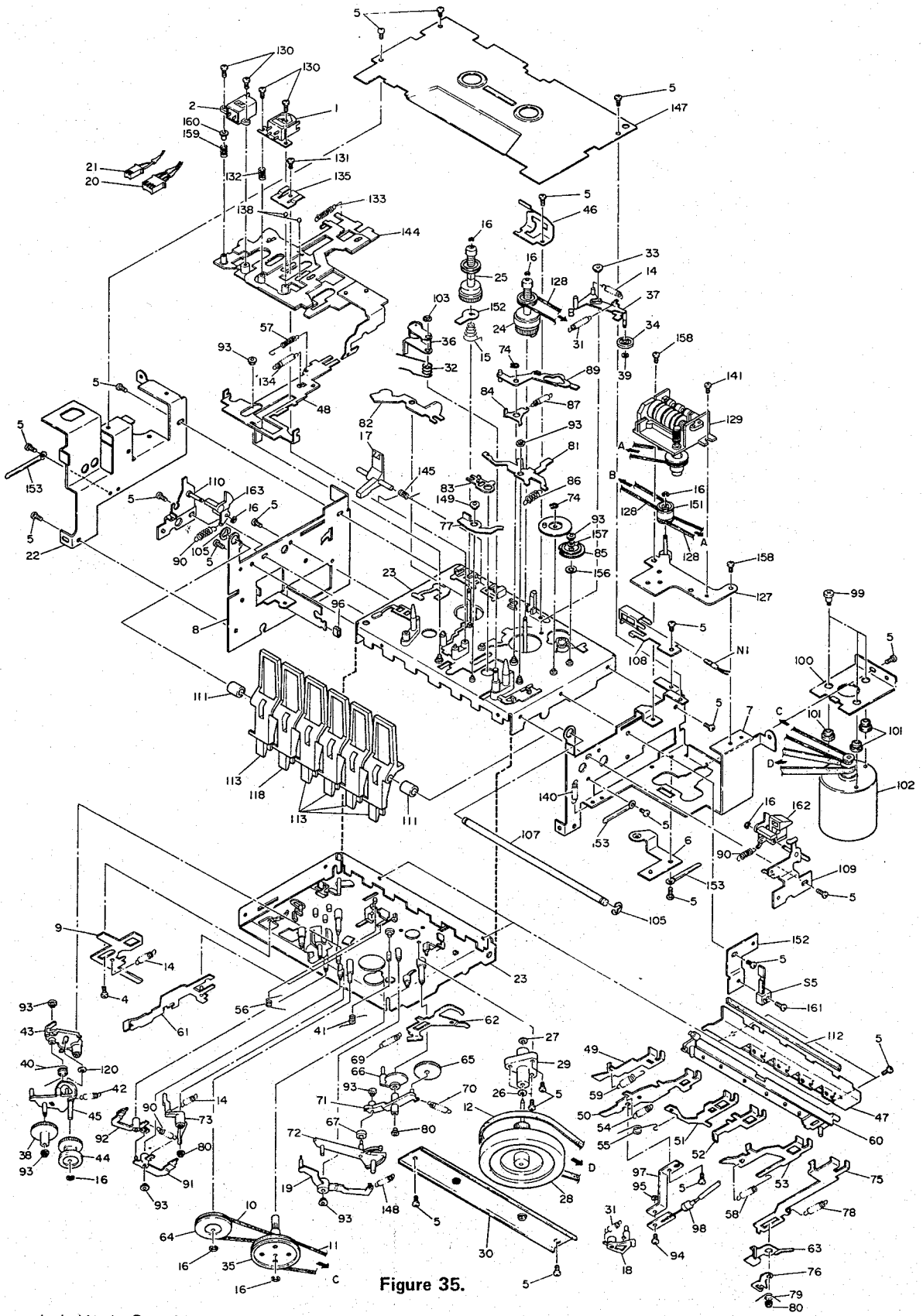


Figure 35.

NOTE: Parts excluded in the Parts List are not available as replacement parts.

12. PARTS LIST

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
		MECHANICAL PARTS
1	22217343	Head, Record/Playback (HRPT-68)
2	22218213	Head, Erase (HET-43)
4	22707461	Screw, Tapping, 2.6ϕ x 6mm (BID)
5	22707350	Screw, 2.6ϕ x 5mm (DT BID)
10	25755416	Belt Cam-wheel
11	25755417	Belt, Meddle Pulley
12	25755434	Belt Drive
14	25771584	Spring, Brake Lever
15	25772538	Spring, Sift lever
16	25735159	E Washer, 1.5ϕ
17	25782308	Lever, Erase Prevention
18	25782310	Lever, Record Prevention
19	25782312	Lever, Sift
24	25712363	Take-up Pulley Ass'y
25	25712364	Supply Pulley Ass'y
26	25764398	Washer, Nylon, 2.5ϕ
27	25764520	Washer PA, 2.4ϕ
28	25717410	Flywheel Ass'y
29	25718158	Holder, Capstan Ass'y
31	25771957	Spring, Take-up Idler
32	25773447	Spring, Pinch Roller, Right
33	25783195	Bush, 2.5ϕ
34	25713471	Take-up Idler Ass'y, Right
35	25713492	Puller Ass'y, Center
36	25717440	Pinch Lever Ass'y, Right
37	25791072	Take-up Slider Ass'y
38	25756198	Gear, Rewind
39	25764489	Washer, PO, 1.7ϕ
40	25773421	Spring, Rewind
41	25773422	Spring, FF
42	25771586	Spring, Lever, High Speed
43	25782304	Lever, High Speed
44	25713491	Idler Ass'y, High Speed
45	25791073	Lever Ass'y High Speed
46	25779050	Spring, Cassette Holder
49	25741584	Operation Plate, Stop
50	25741585	Operation Plate, Record
51	25741586	Operation Plate, Rewind
52	25741587	Operation Plate, Playback
53	25741588	Operation Plate, Fast-forward
54	25771588	Spring
55	25773430	Spring, Rewind Lever
56	25773431	Spring, Switch, Slider
57	25776099	Spring, Play Slider

Symbol No.	Part No.	Description
58	25776060	Spring, FF Lever
59	25776061	Spring, Stop Lever
60	25782331	Plate, Rock
63	25748418	Lever, ASO Pause
64	25751593	Cam-wheel
65	25756199	Gear ASO A
66	25756200	Gear, ASO B
67	25761407	Spacer, ASO Lever
69	25771586	Spring, ASO Slider
70	25776062	Spring, ASO Lever
71	25782302	ASO Lever
72	25782306	Lever, ASO
73	25782309	Lever, ASO Bias
74	25735197	G Ring, 2.5ϕ
75	25741589	Operation Plate, Pause
76	25748424	Lever, Lock, Pause
78	25771594	Spring, Pause Lever
79	25773446	Spring, Lock, Pause
80	25783211	Bush, 3ϕ
85	25756189	Gear, Reverse, A
86	25771544	Spring, Gear Lock Lever
87	25771964	Spring, Lever, Bias
88	25713503	Gear Ass'y, Reverse B
89	25791064	Lever Ass'y, Repeat
90	25771963	Spring, Cassette Holder
91	25715182	Brake Lever Ass'y (T)
92	25715183	Brake Lever Ass'y (S)
93	25783199	Washer, PA, 2ϕ
94	22707473	Screw, 2.6ϕ x 6mm (BID)
95	25720130	Nut, 2.6ϕ
96	25761354	Cushion, Arm
97	25774556	Spring, Record
99	22707429	Screw, 2.6ϕ
101	25761238	Cushion, Motor
102	25791081	Motor Ass'y
103	22703118	E Ring, 2ϕ
105	22703280	E Ring, 4ϕ
112	25761403	Cushion, Button
113	25782318	Button, Play, Rewind, FF, Pause, Stop
118	25782319	Button, Record
120	25764550	Washer, PO, 3.6ϕ
128	25755359	Belt, Counter
129	25873212	Counter
130	22707451	Screw, 2ϕ x 5mm
131	22707300	Screw, Tapping, 2.6ϕ x 6mm(BID)
132	25772240	Spring, Head
133	25776126	Spring, Search Slider

Symbol No.	Part No.	Description
134	25776058	Spring, Head Slider
135	25779020	Spring, Head Slider Hold
138	25757120	Ball, Steel 3ϕ
139	25735242	Washer, CS, Head Chassis
140	25776127	Spring
141	22707366	Screw, 2.6ϕ x 6mm (BID)
145	25773448	Spring, Record Lock
147	25791078	Mechanism Cover Ass'y
148	25771780	Spring, Sift Lever
151	25758035	Pulley, Center
156	25764582	Washer, PO, 4ϕ
157	25764583	Washer, PO, 2ϕ
158	22707151	Screw, 2.6ϕ x 5mm (BID)
159	25772438	Spring, Erase Head
160	25726489	Sleeve, Erase Head
161	22707499	Screw, 2ϕ x 8mm (DT BID)
162	25782257	Cassette Holder, Right
163	25782292	Cassette Holder, Left

CABINET PARTS

301	25819436	Front Panel Ass'y (TA, TC, VF)
301	25819437	Front Panel Ass'y (TE, TU, AY)
302	25764536	Washer
303	25772471	Spring, Knob
304	25837228	Knob, Push
305	22834944	Knob, Base
306	25829387	Side Board, Left
307	25829388	Side Board, Right
308	25837198	Knob, Volume A
309	25837199	Knob, Volume B
310	25837317	Knob, Lever
311	25838242	Cover, Head
312	25816562	Knob Ass'y, Power
313	25829396	Jack Plate (TA, TC)
313	25829397	Jack Plate (TE)
313	25829398	Jack Plate (TU, AY)
313	25829399	Jack Plate (VF)
314	25832385	Indicator, Meter
315	25835408	Foot
⚠ 320	25845528	Bush, Nylon (TE, TU, AY)
⚠ 320	25845120	Bush, Nylon (TA, TC, VF)
322	22707473	Screw, 2.6ϕ x 6mm (BID)
324	22707350	Screw, 2.6ϕ x 5mm (DT BID)
325	22707445	Screw, 3ϕ x 6mm (DT BID)
326	22707066	Screw, 3ϕ x 6mm (BID)
327	22701482	Screw, 3ϕ x 6mm (PAN)
330	22707327	Screw, Tapping, 3ϕ x 8mm (BID)
331	22707040	Screw, 4ϕ x 6mm (BID)

Symbol No.	Part No.	Description
332	22707512	Screw, 3ϕ x 6mm (FT BID)
333	22707535	Screw, 2.6ϕ x 12mm (BID)
334	22701313	Screw, 3ϕ x 4mm (BID)
335	22703269	Washer
336	22874027	Foot
337	22707536	Screw, 3ϕ x 10mm (BID) (VF)
338	22950753	Label, Voltage (VF)

TRANSISTORS, DIODES AND IC'S

Q401, 402		IC, TA7322P
Q403, 404		IC, TA7136P
Q405, 406		Transistor, 2SC1815-GR
Q407, 408		Transistor, 2SA1015-GR
Q409, 410	22114681	IC, NE646BN-C
Q411, 412		IC, TA7140P
Q501, 502		Transistor, 2SC1815-GR
Q503		Transistor, 2SA1015-GR
Q504		Transistor, 2SC1815-GR
Q505		IC, TA7318P
Q506	22114770	IC, LM3914N
Q507,508		Transistor, 2SC1815-GR
Q509		Transistor, 2SA562-Y
Q510, 511		Transistor, 2SC1815-GR
Q512, 513		Transistor, 2SC1959-Y
Q901		Transistor, 2SC1959-Y
Q902		Transistor, 2SA562-Y
Q903, 904		Transistor, 2SC1626-Y
D501		Diode, TLG208
D502		Diode, TLR208
D503		Diode, S4378
⚠ D901, 902	22115485	Diode, WL02M
D903		Diode, 02Z13A
D904		Diode, 02Z6.2A

ELECTRICAL PARTS

⚠ T1	22223737	Transformer, Power (TE)
⚠ T1	22223738	Transformer, Power (TU, AY)
⚠ T1	22223736	Transformer, Power (TA, TC)
⚠ T1	22223739	Transformer, Power (VF)
S1	22195464	Slide Switch, Rec./Play.
S2	22195361	Lever Switch, Bias
S3	22195362	Lever Switch, EQ
S4	22195440	Push Switch, Dolby
S5	22195465	Leaf Switch, Muting

	Symbol No.	Part No.	Description
⚠	S6	22146295	Push Switch, Power (TE, TU, AY, VF)
⚠	S6	22195226	Push Switch, Power (TA, TC)
⚠	S7	22146186	Slide Switch, Power Select (VF)
	L401, 402	22232207	Coil, Trap (2.2mH)
	L403, 404	22232203	Coil, Trap (22mH)
	Z401, 402	22153075	Filter, Dolby
	Z501	22132530	Bias OSC Unit
	N1	22113397	Lamp, 14V/80mA
	J401	22163759	Jack, US PIN
	J402	22163675	Jack, Microphone
	J403	22163777	Jack, Headphone
⚠	E1	22176286	Cord, Power (TE)
⚠	E1	22176536	Cord, Power (TU)
⚠	E1	22176588	Cord, Power (AY)
⚠	E1	22176573	Cord, Power (TA, TC)
⚠	E1	22176125	Cord, Power (VF)

CAPACITORS

D=±0.5pF, J=±5%, K=±10%

ABBREVIATIONS: CD=Ceramic Disk, EL=Electrolytic
MY=Mylar, PS=Polystyrene

C401, 402	22372103	MY, 0.01mfd, 50V, K
C403, 404	22448339	EL, 3.3mfd, 50V
C405, 406	22349561	CD, 560pF, 50V, K
C407, 408	22483101	EL, 100mfd, 10V
C409, 410	22371183	MY, 0.018 mfd, 50V, J
C411, 413	22349331	CD, 330pF, 50V, K
C413, 414	22349221	CD, 220pF, 50V, K
C415, 416	22372102	MY, 1000pF, 50V, K
C417, 418	22448339	EL, 3.3mfd, 50V
C419, 420	22480008	EL, 0.68mfd, 50V, K
C421, 422	22448339	EL, 3.3mfd, 50V
C423, 424	22362470	CD, 47pF, 50V, K
C425, 426	22361100	CD, 10pF, 50V, D
C427, 428	22445100	EL, 10mfd, 16V
C429, 430	22371223	MY, 0.022mfd, 50V, J
C431, 432	22372103	MY, 0.01mfd, 50V, K
C433, 434	22372153	MY, 0.015mfd, 50V, K
C435, 436	22448109	EL, 1mfd, 50V
C437, 438	22349561	CD, 560pF, 50V, K
C439, 440	22349151	CD, 150pF, 50V, K
C441, 442	22349101	CD, 100pF, 50V, K
C443, 444	22448339	EL, 3.3mfd, 50V
C445, 446	22448109	EL, 1mfd, 50V
C447, 448	22349151	CD, 150pF, 50V, K
C449, 450	22445101	EL, 10mfd, 16V
C451, 452	22371472	MY, 4700pF, 50V, J
C453, 454	22371273	MY, 0.027mfd, 50V, J
C455, 456	22371562	MY, 5600pF, 50V, J
C457, 458	22349471	CD, 470pF, 50V, K

	Symbol No.	Part No.	Description
	C459, 461	22480006	EL, 0.33mfd, 50V
	C461, 462	22480003	EL, 0.1mfd, 50V, K
	C463, 464	22445100	EL, 10mfd, 16V
	C465, 466	22372473	MY, 0.047mfd, 50V, K
	C467, 468	22372102	MY, 1000pF, 50V, K
	C469, 470	22445100	EL, 10mfd, 16V
	C471, 472	22445100	EL, 10mfd, 16V
	C473, 474	22448339	EL, 3.3mfd, 50V
	C475, 476	22445100	EL, 10mfd, 16V
	C477, 478	22445330	EL, 33mfd, 16V
	C479, 480	22372102	MY, 1000pF, 50V, K
	C481, 482	22486470	EL, 47mfd, 25V
	C483, 484	22448339	EL, 3.3mfd, 50V
	C485, 486	22372103	MY, 0.01mfd, 50V, K
	C501	22445470	EL, 47mfd, 16V
	C502	22380101	PS, 3900pF, 200V, K
	C503	22483101	EL, 100mfd, 10V
	C505, 506	22372103	My, 0.01mfd, 50V, K
	C507, 508	22371103	MY, 0.01mfd, 50V, J
	C509	22485221	EL, 220mfd, 16V
	C510	22445100	EL, 10mfd, 16V
	C511	22448339	EL, 3.3mfd, 50V
	C901, 902	22487102	EL, 1000mfd, 35V
	C903, 904	22486331	EL, 330mfd, 25V
	C905, 906	22486101	EL, 100mfd, 25V
	C907	22486331	EL, 330mfd, 25V
	C908	22486101	EL, 100mfd, 25V
⚠	C909	22485102	EL, 1000mfd, 16V
⚠	C910	22485331	EL, 330mfd, 16V
	C911	22483101	EL, 100mfd, 10V
	C914, 915	22486101	EL, 100mfd, 25V
	C916	22483331	EL, 330mfd, 10V
⚠	C917	22340147	CD, 0.01mfd, 400V (TE, TU, AY, VF)
⚠	C917	22340140	CD, 0.01mfd, 125V (TA, TC)

RESISTORS

All resistors are ±5%, ¼W, carbon film unless otherwise noted.

R401, 402	22658494	50k ohm, Semi-fixed
R403, 404	22658498	10k ohm, Semi-fixed
R405, 406	22658496	200k ohm, Semi-fixed
R407, 408	22658493	20K ohm, Semi-fixed
R409, 410	22555224	220k ohm
R411, 412	22555332	3.3k ohm
R413, 414	22555473	47k ohm
R415, 416	22555105	IM ohm
R501	22555222	2.2k ohm
R502	22547391	390 ohm, ½W

Symbol No.	Part No.	Description
R503	22547101	100 ohm, ½W
R504	22547681	680 ohm, ½W
R505, 506	22555221	220 ohm
R507	22555152	1.5k ohm
R508, 509	22555102	1k ohm
R510, 511	22555473	47k ohm
R512, 513	22555102	1k ohm
R514	22555681	680 ohm
R515	22655417	50k ohm, Variable
R516	22625013	10k ohm, Variable
R517	22555471	470 ohm
R518	22555104	100k ohm
R901	22547121	120 ohm, ½W
R902, 903	22555222	2.2k ohm
R904	22547181	180 ohm, ½W
R905	22547101	100 ohm, ½W
R906	22555471	470 ohm
R907	22547101	100 ohm, ½W
Following symbols are ones of printed resistors on P.C.Board.		
PR401, 402	22545473	47K ohm
PR403, 404	22545222	2.2K ohm
PR405, 406	22545104	100K ohm
PR407, 408	22545121	120 ohm
PR409, 410	22545331	330 ohm
PR411, 412	22545224	220K ohm
PR413, 414	22545153	15K ohm
PR415, 416	22545392	3.9K ohm
PR417, 418	22545272	2.7K ohm
PR419, 420	22545331	330 ohm
PR421, 422	22545472	4.7K ohm
PR423, 424	22545473	47K ohm
PR425, 426	22545823	82K ohm
PR427, 428	22545474	470K ohm
PR429, 430	22545682	6.8K ohm
PR431, 432	22545152	1.5K ohm
PR433, 434	22545221	220 ohm
PR435, 436	22545223	22K ohm
PR437, 438	22545222	2.2K ohm
PR439, 440	22545472	4.7K ohm
PR441, 442	22545153	15K ohm
PR445, 446	22545471	470 ohm
PR447, 448	22545103	10K ohm
PR449, 450	22545333	33K ohm
PR451, 452	22545333	33K ohm
PR453, 454	22545102	1K ohm
PR455, 456	22545274	270K ohm
PR457, 458	22545224	220K ohm
PR459, 460	22545103	10K ohm
PR461, 462	22545221	220 ohm
PR463, 464	22545221	220 ohm
PR465, 466	22545103	10K ohm
PR467, 468	22545473	47K ohm
PR469, 470	22545102	1K ohm
PR471, 472	22545101	100 ohm
PR473, 474	22545103	10K ohm
PR475,476	22545101	100 ohm
PR477, 478	22545153	15K ohm
PR479, 480	22545104	100K ohm
PR481, 482	22545104	100K ohm
PR483, 484	22545473	47K ohm
PR485, 486	22545473	47K ohm
PR502	22545104	100K ohm
PR503	22545102	1K ohm
PR504, 505	22545103	10K ohm
PR506, 507	22545103	10K ohm
PR508, 509	22545103	10K ohm
PR510	22545473	47K ohm
PR511	22545103	10K ohm
PR512	22545104	100K ohm
ACCESSORIES		
	22902491	Owner's Manual (TA)
	22902492	Owner's Manual (TC)
	22902493	Owner's Manual (TE, TU, AY)
	22902495	Owner's Manual (VF)
	22164775	Junction Cord
	22990374	Cleaner, Head

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